

## PROFILE

### **Dr. P.P. KANNAN**

Assistant Professor

PG & Research Department of Physics

Mannar Thirumalai Naicker College

Madurai – 625 004.

Mobile No. : 09629770005

E mail: [kannanpp@mannarcollege.ac.in](mailto:kannanpp@mannarcollege.ac.in)



### **ACADEMIC QUALIFICATIONS:**

|                  |  |
|------------------|--|
| <b>2013-2020</b> | <b>Ph.D., Physics</b><br>Thiagarajar College, Madurai. (Madurai Kamaraj University)<br>Grade: Highly commendable   |
| <b>2011-2013</b> | <b>M.Sc., Physics</b><br>Thiagarajar College, Madurai. (Madurai Kamaraj University)<br>Percentage of Marks: 75.32% |
| <b>2008-2011</b> | <b>B.Sc., Physics</b><br>Sourashtra College, Madurai. (Madurai Kamaraj University)<br>Percentage of Marks: 74.38%  |
| <b>2007-2008</b> | <b>Class XII</b><br>Sourashtra Boys Higher Secondary School, Madurai<br>Percentage of Marks: 64.25%                |
| <b>2005-2006</b> | <b>Class X</b><br>Sourashtra Boys Higher Secondary School, Madurai<br>Percentage of Marks: 77.60%                  |

### **RESEARCH EXPERIENCE:**

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| <b>2013-2020</b>            | Full time Ph.D., scholar - Department of Physics, Thiagarajar College, Madurai- 625 009.   |
| <b>Title of the Thesis:</b> | <b>Dielectric studies, spectrometric studies and theoretical calculations on the molecular interactions of binary polar-polar liquid mixtures.</b> |

➤ Total Number of Publications in Scopus/UGC approved Journal: **22**

➤ Total Number of Citations : **305**

➤ h-index: **10**

➤ i10- index: **12**

Google Scholar Link: <https://scholar.google.co.in/citations?user=fX6NtfYAAAAJ&hl=en>

ResearchGate Link: <https://www.researchgate.net/profile/Pp-Kannan>

Vidwan Profile Link: <https://vidwan.inflibnet.ac.in//profile/199075>

Scopus Link: <https://www.scopus.com/authid/detail.uri?authorId=56583759000>

ORCID ID: <https://orcid.org/0000-0001-6856-3828>

### RESEARCH INTERESTS:

Chemical Physics - Dielectric Studies using Time Domain Reflectometry (TDR) technique, Dipolemoment studies, Fourier Transform Infra-Red (FTIR) spectroscopy, Nuclear Magnetic Resonance (NMR) spectroscopy, Ultra Violet (UV) - visible spectroscopy, Density Functional Theory (DFT) calculations.

### JOURNAL REVIEWER:

Vibrational Spectroscopy – Elsevier Publications

### TEACHING EXPERIENCE:

**01.06.2019 – till date** Assistant Professor, PG & Research Department of Physics (SF), Mannar Thirumalai Naicker College, Pasumalai, Madurai.  
PG – 5 Years & UG – 5 Years

### RESEARCH PUBLICATIONS:

1. **P.P. Kannan**, N. K. Karthick, T. Sangeetha, R. Shanmugam, A. Elangovan, G. Arivazhagan, “*FTIR studies and DFT calculations on the associative nature of methyl cellosolve in binary solutions with acetonitrile*” Journal of Molecular Structure, 1227 (2021) 129572.

2. **P.P. Kannan**, N. K. Karthick, G. Arivazhagan, “*Hydrogen bond interactions in the binary solutions of formamide with methanol: FTIR spectroscopic and theoretical studies*” *Spectrochimica Acta Part A*: 229 (2020) 117892 (1-8).
3. **P.P. Kannan**, G. Arivazhagan, T. Sangeetha, N. K. Karthick, A.C. Kumbharkhane, “*FTIR Studies, DFT calculations and time domain reflectometry studies on tetrahydrofuran - methanol binary solutions*” *Spectrochimica Acta Part A*: 222 (2019) 117162 (1-8).
4. **P.P. Kannan**, N. K. Karthick, A. Mahendraprabu, A.C. Kumbharkhane, Y.S. Joshi, G. Arivazhagan, “*FTIR spectroscopy, quantum chemical calculations and time domain reflectometry studies on the behavior of methanol molecules in the environment of dibutyl ether*” *Journal of Molecular Structure*, 1183 (2019) 60-69.
5. **P.P. Kannan**, N. K. Karthick, A. Mahendraprabu, R. Shanmugam, A. Elangovan, G. Arivazhagan, “*Red / blue shifting hydrogen bonds in acetonitrile- dimethyl sulphoxide solutions : FTIR and theoretical studies*”, *Journal of Molecular Structure* 1139 (2017) 196 – 201.
6. **P.P. Kannan**, N. K. Karthick, A. Mahendraprabu, R. Shanmugam, A. Elangovan, G. Arivazhagan, “*Corrigendum to Red / blue shifting hydrogen bonds in acetonitrile-dimethyl sulphoxide solutions : FTIR and theoretical studies*”, *Journal of Molecular Structure* 1149 (2017) 812 – 817.
7. S. Nagadeepa, I. Ayswariya, P. Indira, V. Ramalakshmi, **P.P. Kannan**, “*Green Synthesis of iron nanoparticles using leaves extract and their characterization analysis*” *International Journal of Creative Research Thoughts* 11 (2023) 893-896.
8. N.K. Karthick, G. Arivazhagan, **P.P. Kannan**, “*FTIR spectroscopic studies and DFT calculations on the binary solution of methyl acetate with m-xylene*” *Journal of Molecular Liquids*, 313 (2020) 113491 (1-8).
9. T. Sangeetha, **P.P. Kannan**, N.K. Karthick, A. Mahendraprabu, G. Arivazhagan, “*Classical/non-classical hydrogen bonds in m-xylene - ethanol solution: FTIR and theoretical approach*” *Journal of Molecular Liquids*, 312 (2020) 113406 (1-8).
10. A. Mahendraprabu, T. Sangeetha, **P.P. Kannan**, N. K. Karthick, A.C. Kumbharkhane, G. Arivazhagan, “*Hydrogen bond interactions of ethyl acetate with methyl Cellosolve: FTIR spectroscopic and dielectric relaxation studies*” *Journal of Molecular Liquids*, 301 (2020) 112490 (1-5).

11. A. Mahendraprabu, N.K. Karthick, **P.P. Kannan**, T. Sangeetha, A.C. Kumbharkhane, G. Arivazhagan, “*Molecular interactions in the binary solutions of methyl cellosolve with chlorobenzene: Spectroscopic and dielectric studies*” *Journal of Molecular Structure*, 1205 (2020) 127565 (1-7).
12. N.K. Karthick, G. Arivazhagan, **P.P. Kannan**, A.C. Kumbharkhane, Y.S. Joshi, “*Homo/heterointeractions in the binary solutions of toluene with acetonitrile: FTIR spectroscopic, theoretical and dielectric studies*” *Journal of Molecular Structure*, 1192 (2019) 208 – 216.
13. V. Ramalakshmi, **P.P. Kannan**, A. Mahendraprabu, U. Sankar, “*Dielectric relaxation studies on diethanolamine and triethanolamine with N,N – Dimethylformamide using time domain reflectometry technique*” , *Journal of Analysis and Computations* 13 (2019) 41 – 47.
14. N.K. Karthick, G. Arivazhagan, **P.P. Kannan**, A. Mahendraprabu, “*FTIR spectral studies and dielectric relaxation studies on binary solutions of ethyl acetate and bromobenzene*” *Indian Journal of Pure & Applied Physics* 56 (2018) 261-264.
15. N.K. Karthick, G. Arivazhagan, **P.P. Kannan**, A. Mahendraprabu, A.C. Kumbharkhane, S.S. Shaikh, Y.S. Joshi, “*Hydrogen bond interactions in the binary solutions of ethyl acetate with nitrobenzene: Spectroscopic, theoretical and dielectric studies*”, *Journal of Molecular Liquids* 251 (2018) 385 – 393.
16. M. Vigneswaran, **P.P. Kannan**, “*Investigation of hydrogen bond interactions between propionic acid and acetonitrile/acetone using spectroscopic techniques*”, *Journal of Analysis and Computations* 11 (2018) 1 – 5.
17. N.K. Karthick, **P.P. Kannan**, A. Mahendraprabu, G. Arivazhagan, N. Suganya, “*Spectroscopic studies on the binary solutions of ethanol with 1,4- dioxane*”, *Journal of Molecular Liquids* 232 (2017) 147 – 151.
18. A. Mahendraprabu, A.C. Kumbharkhane, Y.S. Joshi, S.S. Shaikh, **P. P. Kannan**, N.K. Karthick, G. Arivazhagan, “*Spectroscopic and time domain reflectometry studies on acetonitrile – ethylene glycol binary solutions*”, *Journal of Molecular Structure* 1136 (2017) 303 – 308.
19. Deepali L. Jadhav, N.K. Karthick, **P.P. Kannan**, R. Shanmugam, A. Elangovan, G. Arivazhagan, “*Molecular interaction forces in acetone + ethanol binary liquid solutions: FTIR and theoretical studies*”, *Journal of Molecular Structure* 1130 (2017) 497 – 502.

20. N.K. Karthick, G. Arivazhagan, A.C. Kumbharkhane, Y.S. Joshi, **P.P. Kannan**, “*Time domain reflectometric study on toluene + propionitrile binary mixture*”, *Physics and Chemistry of Liquids* 54 (6) (2016) 779 – 785.
21. N.K. Karthick, G. Arivazhagan, A.C. Kumbharkhane, Y.S. Joshi, **P.P. Kannan**, “*Time Domain Reflectometric and spectroscopic studies on toluene + butyronitrile solution*”, *Journal of Molecular Structure* 1108 (2016) 203 – 208.
22. G. Arivazhagan, A. Elangovan, R. Shanmugam, R. Vijayalakshmi, **P.P. Kannan**, “*Spectroscopic studies, NBO analysis and dielectric studies on the behaviour of acetone molecules in non-polar solvent environment*” *Chemical Physics Letters* 627 (2015) 101 – 106.

#### **PAPERS PRESENTED IN CONFERENCES/SEMINARS:**

1. **P.P. Kannan**, M. Velmurugan, “*Hydrogen bond interactions between ethanol and isopropyl alcohol: FTIR spectroscopic studies and DFT calculations*”, abstract published in the 2<sup>nd</sup> International Conference on “**Frontiers in Chemistry and Material Science (ICFCMS – 22)**” organized by Department of Chemistry, Mannar Thirumalai Naicker College, Madurai, Tamilnadu, India on 19 & 20<sup>th</sup> December 2022.
2. **P.P. Kannan**, G. Arivazhagan, “*FTIR and <sup>13</sup>C NMR Spectroscopic studies on the binary solutions of methanol with N,N- dimethylformamide*”, abstract published in the proceedings and **won the first prize for paper presentation** of the “**National Seminar on Advanced Materials**”, organized by the PG & Research Department of Physics, Jamal Mohamed College, Tiruchirappalli, Tamilnadu , India on 23<sup>rd</sup> January 2020.
3. **P.P. Kannan**, T. Sangeetha, G. Arivazhagan, A.C. Kumbharkhane, “*Molecular interaction forces in liquid solutions of dibutyl ether with N,N-dimethylformamide – time domain reflectometric technique, FTIR spectroscopy and DFT calculations*”, paper published in the proceedings of the “**International Conference on Emerging Trends and Challenges**”, organized by the Science Department, NPR Arts & Science College, Natham, Dindigul, Tamilnadu, India during December 28, 2018.
4. **P.P. Kannan**, G. Arivazhagan, A.C. Kumbharkhane, “*Spectroscopic (FTIR, <sup>13</sup>C NMR) and time domain reflectometry studies on the binary solutions of tetrahydrofuran with methanol*”, abstract published in the proceedings of the “**National Conference on Dielectric Relaxation and Spectroscopic Techniques**”, organized by the School of

Physical Sciences, Swami Ramanand Teerth Marathwada University, Nanded, Maharashtra, India during December 14 – 15, 2017.

5. **P.P. Kannan**, G. Arivazhagan , A. C. Kumbharkhane, “*Inter/intramolecular forces in solutions of dibutyl ether with N, N-dimethylformamide - time domain reflectometric technique, FTIR spectroscopy and DFT calculations*”, abstract published in the proceedings of the “ **International Conference on Recent Advances in Applied Physics**”, organized by the Engineering Physics Section, Faculty of Engineering and Technology, Annamalai University, Annamalai Nagar, Tamilnadu, India during September 21 – 22, 2017.
6. **P.P. Kannan**, N.K. Karthick, A. Mahendraprabu, G. Arivazhagan, “*Homomolecular and heteromolecular interactions in the binary solutions of methyl acrylate with dibutyl ether: Vibrational spectroscopic studies (FTIR) and quantum chemical calculations*”, abstract published in the proceedings of the National Level Seminar on “**Recent Advancements in Materials**”, organized by the PG and Research Department of Physics, Jamal Mohamed College, Tiruchirappalli, Tamilnadu , India on 15<sup>th</sup> February 2017.
7. **P.P. Kannan**, G. Arivazhagan, N.K. Karthick, “*Inter and Intra molecular interaction between methyl cellosolve and acetonitrile / formamide by using spectroscopic studies*”- abstract published in the proceedings of the “**II International Conference on Recent Trends in Materials**”, organized by the Department of Physics, Devanga Arts College, Aruppukottai, Virudhunagar, Tamilnadu, India during January 22 – 23, 2016.

#### DETAILS OF E-CONTENTS DEVELOPED:

| Name of the module developed                            | Date of launching the e-content | Platform on which module has been developed | YouTube Link  |
|---|---------------------------------|---|---|
| Gauss's law   | August 16, 2020                 | YouTube                                     | <a href="https://youtu.be/mjqsdt9GGXg">https://youtu.be/mjqsdt9GGXg</a> |
| Gauss's law proof                                       | August 16, 2020                 | YouTube                                     | <a href="https://youtu.be/CZtnxmtb5aI">https://youtu.be/CZtnxmtb5aI</a> |
| Applications of Gauss law                               | August 22, 2020                 | YouTube                                     | <a href="https://youtu.be/qzKEdcYfpOI">https://youtu.be/qzKEdcYfpOI</a> |
| Electric field due to an infinite plane sheet of charge | August 22, 2020                 | YouTube                                     | <a href="https://youtu.be/lc1Rs5WZa0k">https://youtu.be/lc1Rs5WZa0k</a> |

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| Field near a charged conducting cylinder                            | August 22, 2020    | YouTube | <a href="https://youtu.be/nnPtm0gQIxg">https://youtu.be/nnPtm0gQIxg</a>   |
| Coulomb's theorem   | August 25, 2020    | YouTube | <a href="https://youtu.be/3IDOsZ_33W0">https://youtu.be/3IDOsZ_33W0</a>   |
| Poisson's and Laplace equations                                     | August 26, 2020    | YouTube | <a href="https://youtu.be/y3u0j5SRPgNM">https://youtu.be/y3u0j5SRPgNM</a> |
| The potential of a localized charge distribution                    | August 27, 2020    | YouTube | <a href="https://youtu.be/r0K3CTI0ASo">https://youtu.be/r0K3CTI0ASo</a>   |
| Find the potential of uniformly charged spherical shell of radius R | August 29, 2020    | YouTube | <a href="https://youtu.be/ih-ELfFORG4">https://youtu.be/ih-ELfFORG4</a>   |
| Electrostatic boundary conditions                                   | August 29, 2020    | YouTube | <a href="https://youtu.be/Rg76ebkIfaU">https://youtu.be/Rg76ebkIfaU</a>   |
| Work and Energy in electrostatics                                   | August 30, 2020    | YouTube | <a href="https://youtu.be/VqwJx0bdZgc">https://youtu.be/VqwJx0bdZgc</a>   |
| The energy of a continuous charge distribution in electrostatics    | August 31, 2020    | YouTube | <a href="https://youtu.be/Pt7SNuO9X5g">https://youtu.be/Pt7SNuO9X5g</a>   |
| Electric potential  | September 06, 2020 | YouTube | <a href="https://youtu.be/92dFavkZReA">https://youtu.be/92dFavkZReA</a>   |

#### DETAILS OF CONFERENCE/SEMINAR PARTICIPATED IN VARIOUS INSTITUTIONS:

| S. No | Name of the Programme  | Name of the Institution                            | Date                  |
|-------|--|--|-----------------------|
| 1.    | National level seminar on "Emerging Technology in Physics"           | V.V. Vanniaperumal College for Women- Virudhunagar | Feb 14, 2014          |
| 2.    | State level seminar on "Recent Trends in Solar technology"           | American College- Madurai                          | Feb 20, 2014          |
| 3.    | One day national seminar on Nanomaterials Research- VISION NANO 2014 | Sri Ramakrishna Engineering College- Coimbatore    | Feb 22, 2014          |
| 4.    | International Workshop on Advanced Materials- IWAM                   | Alagappa University- Karaikudi                     | March 20 and 21, 2014 |
| 5.    | National Conference on Optics, Photonics and Lasers – NCOPL-14       | Arul Anandar College- Madurai                      | July 17 and 18, 2014  |
| 6.    | HORIZON-14- "National  | National Institute of Technology-                  | Sept 12 and           |

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|-----|--|---|---------------------------|
|     | Modelling”   | Trichurappalli  | 13, 2014                  |
| 7.  | State level seminar on “Current Trends in Physics”                         | Zakir Husain College- Ilayankudi                      | Sept 21, 2014             |
| 8.  | National level seminar on “Recent Trends in Energy Technologies”           | American College- Madurai                             | Aug 14, 2015              |
| 9.  | TEQIP II Sponsored Workshop on “Physics in Engineering (PIE)”              | Thiagarajar College of Engineering- Madurai           | Nov 5 and 6, 2015         |
| 10. | State level seminar on “Recent Advancement in Material Synthesis”          | Syed Hameedha Arts and Science College- Kilakarai     | Feb 24, 2016              |
| 11. | Workshop on “Corrosion and its Control”                                    | PSGR Krishnammal College for Women- Coimbatore        | June 30 and July 01, 2016 |
| 12. | Science Academics Lecture Workshop on “Scope of Nonlinear Physics”         | Fatima College, Madurai                               | Jan 05 and 06, 2017       |
| 13. | Recent Advances in Synthesis Properties and Applications of nanostructures | Mannar Thirumalai Naicker College, Madurai            | 15 December 2019          |
| 14. | National Seminar on Advanced Materials                                     | Jamal Mohamed College, Tiruchirappalli                | 23 January 2020           |
| 15. | Supercapacitors: New Age Energy Storage Devies                             | Ayya Nadar Janaki Ammal College, Sivakasi             | 19 May, 2020              |
| 16. | History of Nuclear Fission   | V.O.Chidambaram College, Thoothukudi                  | 25 May 2020               |
| 17. | Advancement in Optical Communication through Optical Fibres                | V.V.V. College for Women, Virudhunagar                | 27 May 2020               |
| 18. | Metal Complexes to Metal Nanoparticles For Efficient Catalysis             | SASTRA University, Tanjavur                           | 28 May 2020               |
| 19. | Materials Science and Applications   | Arulmigu Palaniandavar Arts College For Women, Palani | 29 May 2020               |
| 20. | Nanoscale Materials with different dimensions for Advanced Applications    | Mannar Thirumalai Naicker College, Madurai            | 03 & 04 June 2020         |
| 21. | Creative Writing of Research Proposals & Articles                          | Adikavi Nannaya University, Rajamahendravaram         | 04 June 2020              |
| 22. | Nanostructured Materials for Controlling the Flow of Light                 | SRI Y.N COLLEGE, Andhra Pradesh                       | 05 June 2020              |



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| 23. | Local probe techniques: A microscopic look at physical properties in matter          | National College, Tiruchirappalli  | 10 June 2020      |
| 24. | Nanomaterials For Solar Cell Applications  | AMET University, Chennai   | 10 June 2020      |
| 25. | Biomedical Applications of Colloidal Metal Nanoparticles                             | SRM Institute of Science and Technology, Chennai                                     | 10 June 2020      |
| 26. | Non Linear Physics   | SSN College of Engineering, Chennai  | 12 June 2020      |
| 27. | Penetration of Solar Energy in Home Appliances                                       | Hindustan College of Engineering & Technology, Coimbatore                            | 17 June 2020      |
| 28. | Green Energy and Technology  | Kings Engineering College, Chennai   | 19 June 2020      |
| 29. | Recent Trends in Advanced Materials Science  | The American College, Madurai  | 19 June 2020      |
| 30. | Crystal Engineering: From Molecule to Crystal, Crystal Growth Design                 | IISER, Kolkata   | 19 & 20 June 2020 |
| 31. | Crystal Growth and after: Structure and Bonding in Magnetic Materials                | Hindustan College of Engineering & Technology, Coimbatore                            | 20 June 2020      |
| 32. | Basic Author Workshop Research Article Writing & Reference Management Using Mendeley | Annamalai University, Chidambaram  | 22 June 2020      |
| 33. | Powder X-ray diffraction pattern analysis using openwares                            | V.O. Chidambaram College, Thoothukudi  | 22 June 2020      |
| 34. | Nano-Photonics   | Madonna Arts & Science College for Women, Madurai                                    | 23 June 2020      |
| 35. | Radiation Physics  | St. Joseph's College of Engineering, Chennai   | 23 June 2020      |
| 36. | Scholars Who Rocked the World: Rebellion Einstein                                    | Jansons Institute of Technology, Coimbatore  | 24 June 2020      |
| 37. | Basics of IR and Raman Spectroscopy  | Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore | 24 June 2020      |
| 38. | Publishing in International Journals of High Repute: Do's and Don'ts                 | Saveetha Engineering College, Chennai  | 25 June 2020      |
| 39. | Spectroscopy   | Lakshmipuram College of Arts and Science, Kanyakumari                                | 25 June 2020      |
| 40. | Medicinal Plants for Immunity, Strength and Vitality                                 | Kings Engineering College, Chennai   | 25 June 2020      |

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| 41. | Advanced Materials  | CMR Institute of Technology,<br>Bengaluru                                     | 26 June 2020      |
| 42. | Scholars Who Rocked the World: Sir Isaac Newton   | Jansons Institute of Technology,<br>Coimbatore                                | 26 June 2020      |
| 43. | Interdisciplinary Research on Societal Applications: Challenges and Opportunities                       | Bharathiar University, Coimbatore   | 26 & 27 June 2020 |
| 44. | Advanced Materials for Energy and Environmental Applications  | Bharadhidasan University,<br>Tiruchirappalli                                  | 26 & 27 June 2020 |
| 45. | Scholars Who Rocked the World: Need of Socrates in Modern World   | Jansons Institute of Technology,<br>Coimbatore                                | 27 June 2020      |
| 46. | DFT, Molecular Dynamics Simulation and Molecular Docking approach on Potential pharmaceutical compounds | , Puratchi Thalaivar Dr. M.G.R Arts and Science College, Chennai              | 29 June 2020      |
| 47. | Scholars Who Rocked the World: Father of Evolutionary Theory-Charles Darwin                             | Jansons Institute of Technology,<br>Coimbatore                                | 29 June 2020      |
| 48. | Semiconductor Design Process in Industries – 2k20   | Manonmaniam Sundaranar Univeristy Constituent College,<br>Kanyakumari         | 29 June 2020      |
| 49. | Materials Characterization Techniques   | St. Joseph's Institute of Technology, Chennai                                 | 29 June 2020      |
| 50. | Sample Preparation for TEM and Data Analysis  | Madurai Kamaraj University,<br>Madurai  | 30 June 2020      |
| 51. | General Characteristics of d-block Elements-NET Examination   | Government Arts College, Salem  | 01 July 2020      |
| 52. | Research Methodology  | Annai Hajira Women's College,<br>Tirunelveli                                  | 01 July 2020      |
| 53. | Advanced Materials for Sustainable Development  | Kalasalingam University,<br>Krishnankoil                                      | 02 & 03 July 2020 |
| 54. | Future Generation Solar Cells   | Nehru Institute Technology,<br>Coimbatore                                     | 04 July 2020      |
| 55. | Exploration of Physical Science and Engineering with Mathematica  | Gayathri Vidya Parishad College for Degree and PG Courses,<br>Visakhapattinam | 06 July 2020      |
| 56. | Nanoscale Nonlinear Optics – An Exciting Glimpse  | Vellore Institute Technology,<br>Chennai                                      | 07 July 2020      |
| 57. | The Exciting Story of Exoplanets  | Karunya Institute of Technology and Sciences, Coimbatore                      | 08 July 2020      |
| 58. | Development of Advanced Materials for Future  | Jeonbuk National University, South Korea & Vellore Institute of               | 09 & 10 July 2020 |

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|     | Technologies  | Technology, Chennai   |                          |
| 59. | Preparation Methods and Deposition Techniques of Nanostructures   | V.O. Chidambaram College, Thoothukudi                           | 16 July 2020             |
| 60. | Nanostructured Metal Oxide Thin Films for Solar Technology  | Saveetha Engineering College, Chennai                           | 16 July 2020             |
| 61. | Infrared Spectroscopy of Transient Chemical Species in Helium Nanodroplets                              | Sacred Heart College, Tirupattur                                | 17 July 2020             |
| 62. | Are We Alone in the Universe?   | Karunya Institute of Technology and Sciences, Coimbatore        | 24 July 2020             |
| 63. | The Space Scientists - Astronomy Exploring Time & Space   | Jansons Institute of Technology, Coimbatore                     | 26 July 2020             |
| 64. | Epoch of Nonlinearity in Optics   | Mannar Thirumalai Naicker College, Madurai                      | 29 July 2020             |
| 65. | Online short term training programme on “Nanomaterials for clean Energy and Environmental Applications” | Dr.M.Mahalingam college of Engineering and Technology, Pollachi | 2.11.2020 to 7.11.2020   |
| 66. | Biodiversity: Life Insurance for Our Changing World   | Mannar Thirumalai Naicker College, Madurai                      | 26 May 2021              |
| 67. | India’s Three Stage Nuclear Power Programme: Envisioning the Dream of Dr. Homi Jehangir Bhabha          | Karunya Institute of Technology and Sciences, Coimbatore        | 08 June 2021             |
| 68. | Recent Developments in Materials Science – 21   | Sree Saraswathy Thyagaraja College, Coimbatore                  | 16.06.2021 to 22.06.2021 |
| 69. | The Next Generation Planetary Hunters   | Karunya Institute of Technology and Sciences, Coimbatore        | 24 June 2021             |
| 70. | The Future of Radio Astronomy   | Karunya Institute of Technology and Sciences, Coimbatore        | 15 July 2021             |
| 71. | Recent Trends in Physics  | Easwari Engineering College, Chennai                            | 25.07.2022 to 30.07.2022 |
| 72. | Thermoelectric Materials and Applications   | SSN Research Centre, SSN Institutions, Chennai                  | 24.08.2022 & 25.08.2022  |
| 73. | Crystal Growth and Spectroscopy   | St. Joseph College, Tiruchirappalli                             | 29.08.2022 to            |

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|     |  |  | 31.08.2022               |
| 74. | Indigenous Materials for Energy Storage Applications               | Bharat Institute of Engineering and Technology in collaboration with Centre for Research and Development in Education and Social Integration (CRESIHRD) and Indian Ceramic Society- Hyderabad  | 03.09.2022               |
| 75. | Foremost Frontiers of Material Science                             | Institute of Science and Technology, Chennai   | 12.09.2022 to 20.09.2022 |
| 76. | Current Scenario in Advanced Materials Research and Nanotechnology | Rajapalayam Raju's College, Rajapalayam  | 14.09.2022 to 18.09.2022 |
| 77. | Advanced Functional Materials                                      | Gonzaga College of Arts and Science for Women, Krishnagiri   | 28 September 2022        |
| 78. | Advanced Materials for Armour Applications                         | Bharat Institute of Engineering and Technology in collaboration with Centre for Research and Development in Education and Social Integration (CRESIHRD) and Indian Ceramic Society - Hyderabad | 01 October 2022          |
| 79. | Effective Teaching: Insights from Education Psychology             | Bharat Institute of Engineering and Technology in collaboration with Centre for Research and Development in Education and Social Integration (CRESIHRD) and Indian Ceramic Society - Hyderabad | 15 October 2022          |
| 80. | Chemical Science for Sustainability                                | Gonzaga College of Arts and Science for Women, Krishnagiri   | 19 October 2022          |
| 81. | Nanomaterials for Sustainable Future                               | GMR Institute of Technology, Rajam   | 12.12.2022 to 16.12.2022 |
| 82. | Solar Photovoltaics for Sustainable Future                         | Bharat Institute of Engineering and Technology in collaboration with Centre for Research and   | 24 December 2022         |

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|     |   | Development in Education and Social Integration (CRESIHRD) and Indian Ceramic Society - Hyderabad  |                           |
| 83. | Importance of Preparedness of Educators   | Bharat Institute of Engineering and Technology in collaboration with Centre for Research and Development in Education and Social Integration (CRESIHRD) and Indian Ceramic Society - Hyderabad | 31 December 2022          |
| 84. | Nanomaterials for Novel Applications  | Ramco Institute of Technology, Rajapalayam   | 13 January 2023           |
| 85. | Energy Harvesting & Sensors - IEHS 2023   | J.K.K. Nataraja College of Arts & Science, Kumarapalayam   | 17 February 2023          |
| 86. | Smart Materials and Applications  | Gonzaga College of Arts and Science for Women, Krishnagiri   | 27.02.2023 & 28.02.2023   |
| 87. | Recent Trends in Physics  | Jayaraj Annappaikiam College for Women, Periyakulam  | 16.03.2023 & 17.03.2023   |
| 88. | Multifunctional Materials   | Women's Christian College, Chennai   | 18 March 2023             |
| 89. | VisionNano'23: Webinar on Smart Nanosensor Technology for Medical Diagnostics   | Sri Ramakrishna Engineering College, Chennai   | 24 March 2023             |
| 90. | Machine Learning: An Ice Breaker Between Materials Research and Data Science  | SSN Institutions, Chennai  | 12 & 13 April 2023        |
| 91. | Application of Statistics in Research   | St. Joseph University, Nagaland  | 21 April 2023             |
| 92. | Elucidation of chemical structures and quantification of crystalline phase formation                                      | Vellore Institute of Technology, Chennai   | 06 June 2023              |
| 93. | Higher study opportunities & latest research in portable sensor, bio-chip, metal catalysis, atomic & electronic structure | National Sun Yat-Sen University & Educare, Taiwan  | 09 June 2023              |
| 94. | Awareness Program on "Innovation and Intellectual Property  | CSIR-IMMT, Bhubaneswar   | 01 July to 05 August 2023 |

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|      | Rights (IPR)”   |  |                         |
| 95.  | One Week Virtual Workshop on “Concepts of Computational Chemistry (WCCC-2023)”                              | Sathyabama Institute of Science and Technology, Chennai  | 11 to 17 July 2023      |
| 96.  | Recent Trends in Plant Molecular Farming for the Production of Vaccines and Therapeutics                    | PSGR Krishnammal College for Women, Coimbatore           | 20 July 2023            |
| 97.  | National Webinar on Astrophysics, Exoplanets: Distinct worlds from the Solar System                         | Karunya Institute of Technology and Sciences, Coimbatore | 04 August 2023          |
| 98.  | International Webinar on Metal Organic Framework Derived Nanomaterials for High Performance Supercapacitors | Government Arts & Science College for Women, Krishnagiri | 19 September 2023       |
| 99.  | One Week Virtual International Workshop on Frontiers in Chemistry   | Sathyabama Institute of Science and Technology, Chennai  | 20 to 28 September 2023 |
| 100. | International Conference on Functional Materials and Nanodevices  | Chettinad Academy of Research and Education, Kelambakkam | 26 September 2023       |
| 101. | Webinar on Impact of Quantum dots on Engineering  | SRM College for Engineering & Technology, Madurai        | 23 October 2023         |
| 102. | National Webinar on Financial Empowerment through Wealth Creation   | Aravali College of Engineering and Management, Haryana   | 28 November 2023        |
| 103. | National Webinar on How We Manage Our Finance   | Tawakal Solutions & Pvt. Ltd., Jammu & Kashmir           | 29 November 2023        |
| 104. | International Virtual Conference on “Emerging Technologies in Material Science”                             | Jayaraj Annabackiam College for Women, Periyakulam       | 22 December 2023        |
| 105. | Webinar on Magnetic Order in Manganites   | SR University, Warangal                                  | 23 December 2023        |
| 106. | Webinar on Implementation of NEP 2020 at HEIs – Pathways and Challenges                                     | SR University, Warangal                                  | 29 February 2024        |
| 107. | DST FIST sponsored National Seminar on “Tackling Antibiotics Resistance by Bacteriophage Therapy”           | PSGR Krishnammal College for Women, Coimbatore           | 01 March 2024           |

**DETAILS OF FACULTY DEVELOPMENT PROGRAMME ATTENDED IN VARIOUS INSTITUTIONS:**

| <b>S. No</b> | <b>Name of the Faculty Development Programme</b>   | <b>Date</b>             | <b>Name of the Institution</b>                                    |
|--------------|--|-------------------------|---|
| 1.           | Outcome Based Education  | 19 August 2019          | Mannar Thirumalai Naicker College, Madurai                        |
| 2.           | Quality Assurance and Sustenance in higher Education   | 10 March 2020           | Mannar Thirumalai Naicker College, Madurai                        |
| 3.           | 21 <sup>st</sup> Century Skills  | 17 March 2020           | Mannar Thirumalai Naicker College, Madurai                        |
| 4.           | Online National Faculty Enrichment Programme   | 13 to 19 May, 2020      | Mannar Thirumalai Naicker College, Madurai                        |
| 5.           | Online short term training programme on “Nanomaterials for clean Energy and Environmental Applications               | 2.11.2020 to 7.11.2020  | Dr. M. Mahalingam college of Engineering and Technology, Pollachi |
| 6.           | Faculty Development Programme on “Recent Developments in Materials Science – 21”                                     | 16 to 22 June 2021      | Sree Saraswathi Thyagaraja College, Pollachi                      |
| 7.           | International Faculty Development Program on Foremost Frontiers of Material Science                                  | 12 to 20 September 2022 | Sathyabama Institute of Technology, Chennai                       |
| 8.           | Dynamics of Research Publications  | 15 & 16 September 2022  | Mannar Thirumalai Naicker College, Madurai                        |
| 9.           | International online Faculty Development Programme on Current Scenario in Advanced Materials Research and Technology | 14 to 18 November 2022  | Rajapalayam Raju’s College, Rajapalayam                           |
| 10.          | Faculty Development Program on Nanomaterials For Sustainable Future  | 12 to 16 December 2022  | GMR Institute of Technology, Vizianagaram                         |
| 11.          | Consultancy and Corporate Training   | 17 March 2023           | Mannar Thirumalai Naicker College, Madurai                        |
| 12.          | Faculty Development Program on Computational Modeling of Materials   | 08 May 2023             | Madanapalle Institute of Technology and Science, Andhra Pradesh   |
| 13.          | Five Days Faculty Development Program on Energy Materials for a Sustainable Environment                              | 19 to 23 June 2023      | Vellore Institute of Technology, Chennai                          |
| 14.          | One Week National Level Online   | 03 to 09 October        | Rajapalayam Raju’s College, Rajapalayam                           |

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|     | Faculty Development Programme (FDP) on “Advanced Research Methodology in Physical Sciences”  | 2023                   |  |
| 15. | Five Days Faculty Development Program on Advanced Materials for Energy and Applications  | 09 to 13 October 2023  | Sathyabama Institute of Technology, Chennai                |
| 16. | Virtual Faculty Development Programme on “Quality Improvement of Technical Education and Development Of Research”                        | 05 to 12 December 2023 | Sakthi College of Arts and Science for Women, Oddanchatram |
| 17. | One Week National Level Faculty Development Program on “Development of Materials Characterization Techniques and Their Future Prospects” | 18 to 22 December 2023 | Sri S.V.G. Visalakshi College for Women, Udumalapet        |

#### **DETAILS OF PROGRAMMES ORGANIZED:**

| <b>Date</b>             | <b>Name of the Programme</b>   | <b>Role</b>          | <b>Name of the Institution</b>             |
|-------------------------|--|----------------------|--|
| 06.03.2020              | Intercollegiate Physics Meet “SCIFEST 2020”                            | Convener             | Mannar Thirumalai Naicker College, Madurai |
| 12.10.2022 & 13.10.2022 | Hands-on Training Program on “Circuit debugging for 4G/5G smart phone” | Organizing Secretary | Mannar Thirumalai Naicker College, Madurai |
| 07.03.2024              | Intercollegiate Physics Meet “SCIFEST 2K24”                            | Co-Convener          | Mannar Thirumalai Naicker College, Madurai |

#### **TECHNICAL SKILLS:**

MS Word, MS Excel, PowerPoint, Origin, Photoshop, Computer Modeling